

APPLICATION FOR
LANDFILL CLOSURE CAP MODIFICATION
FORMER EDWARDS ROAD LANDFILL PERMIT NO. 34-05

GENERAL NOTES

1.

THE GENERAL NOTES AND LEGEND PROVIDED ON THIS SHEET APPLY TO ALL DRAWINGS, UNLESS OTHERWISE INDICATED.
2.

THESE DRAWINGS ARE INTENDED FOR APPLICATION PURPOSES ONLY, AND ARE NOT RELEASED FOR CONSTRUCTION.
3.

CONTOUR LINES ARE INDICATED AT 2-FOOT INTERVALS WITH ELEVATIONS MEASURED ABOVE MEAN SEAL LEVEL (MSL) DATUM, UNLESS OTHERWISE INDICATED.
4.

SCALES AS ARE INDICATED ON EACH DRAWING.
5.

EXISTING CONTOURS REPRESENT THE TOPOGRAPHY OF THE SITE IN 2008 FROM NC FLOODPLAIN MAPPING PROGRAM AND 2005 FORSYTH COUNTY INFORMATION.
6.

CONTRACTOR SHALL NOTIFY NORTH CAROLINA "DIG SAFE" (1-800-632-4949) AT LEAST 3 DAYS PRIOR TO SUBSURFACE DISTURBANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL SITE UTILITIES PRIOR TO THE INITIATION OF ANY EXPLORATORY OR CONSTRUCTION ACTIVITIES.
7.

CONTRACTOR SHALL MANAGE STORMWATER THROUGHOUT CONSTRUCTION ACTIVITIES AND PREVENT THE MIGRATION OF SEDIMENTS FROM THE SITE.
8.

CONTRACTOR SHALL INSTALL TEMPORARY, AS REQUIRED, AND THREE PERMANENT BENCHMARKS PRIOR TO CONSTRUCTION. THE LOCATION OF ALL BENCHMARKS SHALL BE FIELD DETERMINED BY THE ENGINEER. ALL BENCHMARKS SHALL BE PROTECTED AND/OR RELOCATED IF A BENCHMARK MUST BE DISTURBED DURING CONSTRUCTION. BENCHMARKS SHALL BE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD).
9.

CONTRACTOR SHALL CONTROL AND MONITOR ALL CONSTRUCTION ACTIVITIES ON THE SITE TO ASSURE THAT NO ENVIRONMENTAL RELEASES TO OFFSITE AIR AND WATER RESOURCES OCCURS; ANY RELEASES SHALL IMMEDIATELY BE REPORTED TO THE OWNER, ENGINEER AND APPROPRIATE REGULATORY AGENCIES.
10.

TOTAL DISTURBED ACREAGE FOR THE PROJECT IS 22.88 ACRES.
11.

PROPERTY IS OWNED BY R. J. REYNOLDS TOBACCO CO.
12.


PROPERTY IS LOCATED IN THE YADKIN-PEE DEE RIVER BASIN.

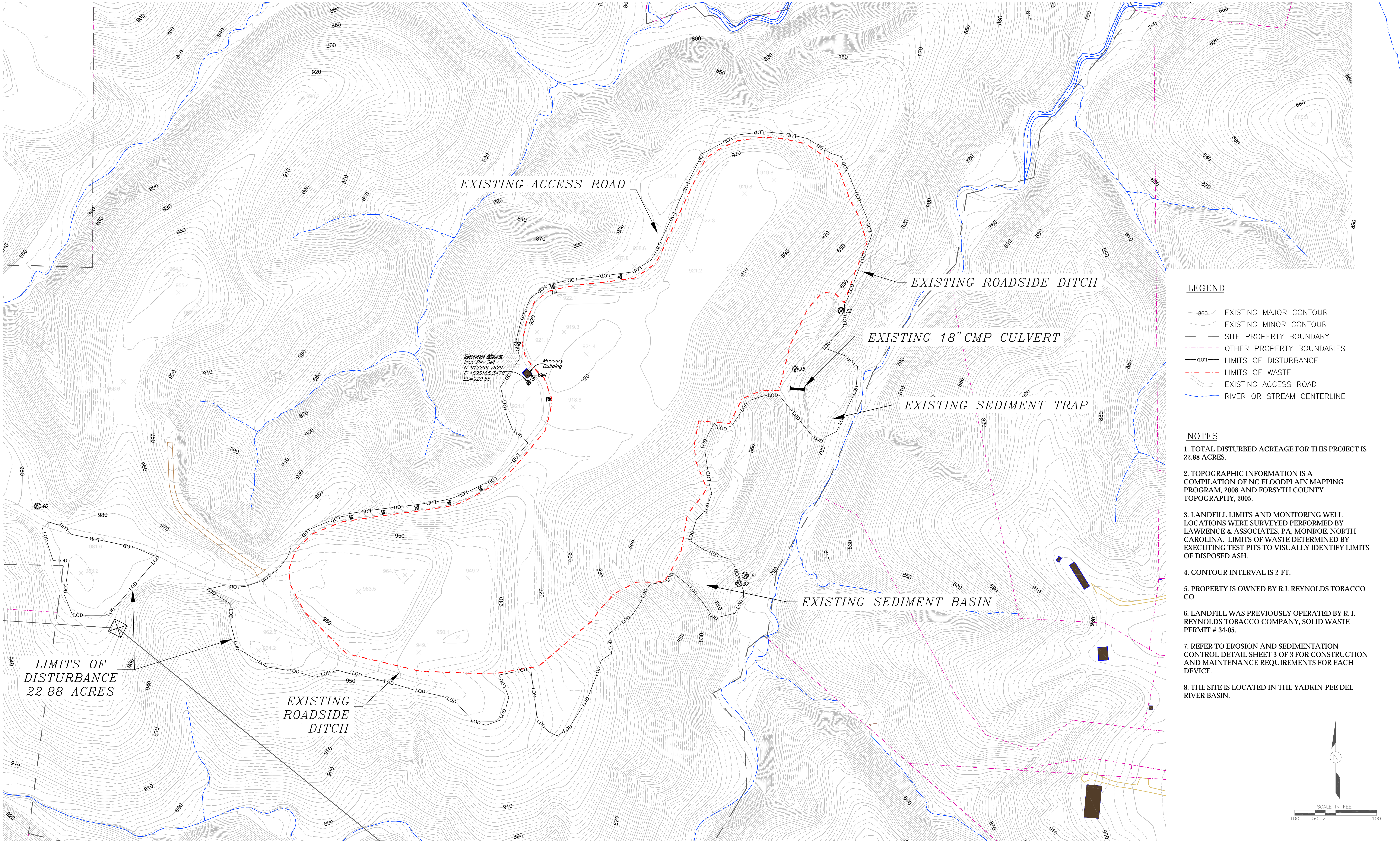
LIST OF DRAWINGS

DRAWING NO.	TITLE
	COVER SHEET
1.	EXISTING SITE CONDITIONS
2.	GRADING PLAN
3.	EROSION & SEDIMENTATION CONTROL PLAN
4.	EROSION & SEDIMENTATION CONTROL DETAIL SHEET
5.	LANDFILL FINAL CAP CONSTRUCTION DETAILS

16393 TITLE PAGE.DWG - 2/2/06

JC RS

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION	RURAL HALL ASH LANDFILL RURAL HALL, NORTH CAROLINA		 <div>LICENSE #C-2206 ERM NC, INC. 8000 CORPORATE CENTER DRIVE, SUITE 200 CHARLOTTE, NORTH CAROLINA 28226 (704) 541-5565</div>	CHECKED	DATE	COVER SHEET LANDFILL CLOSURE MODIFICATION		DRAWING NO.			
												PROJECT DESIGNER D. WASIELA	6/3/11			0		
												PROJECT ENGINEER D. WASIELA						
												PROJECT MANAGER D. WASIELA						
												APPROVED		DRAWN CJM	DATE 6/3/11	CLIENT APPROVAL		
											APPROVED		SCALE AS NOTED	W.O. NO. 0103137	ISSUED FOR	DATE	SHEET	OF

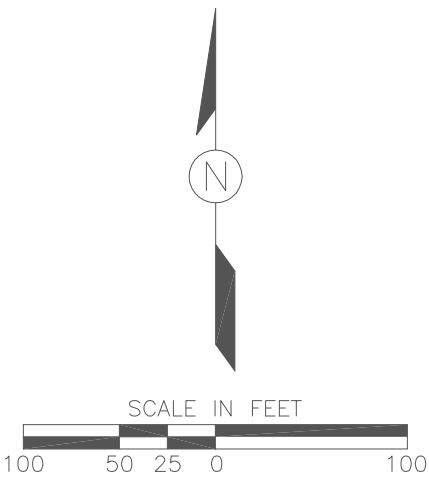


LEGEND

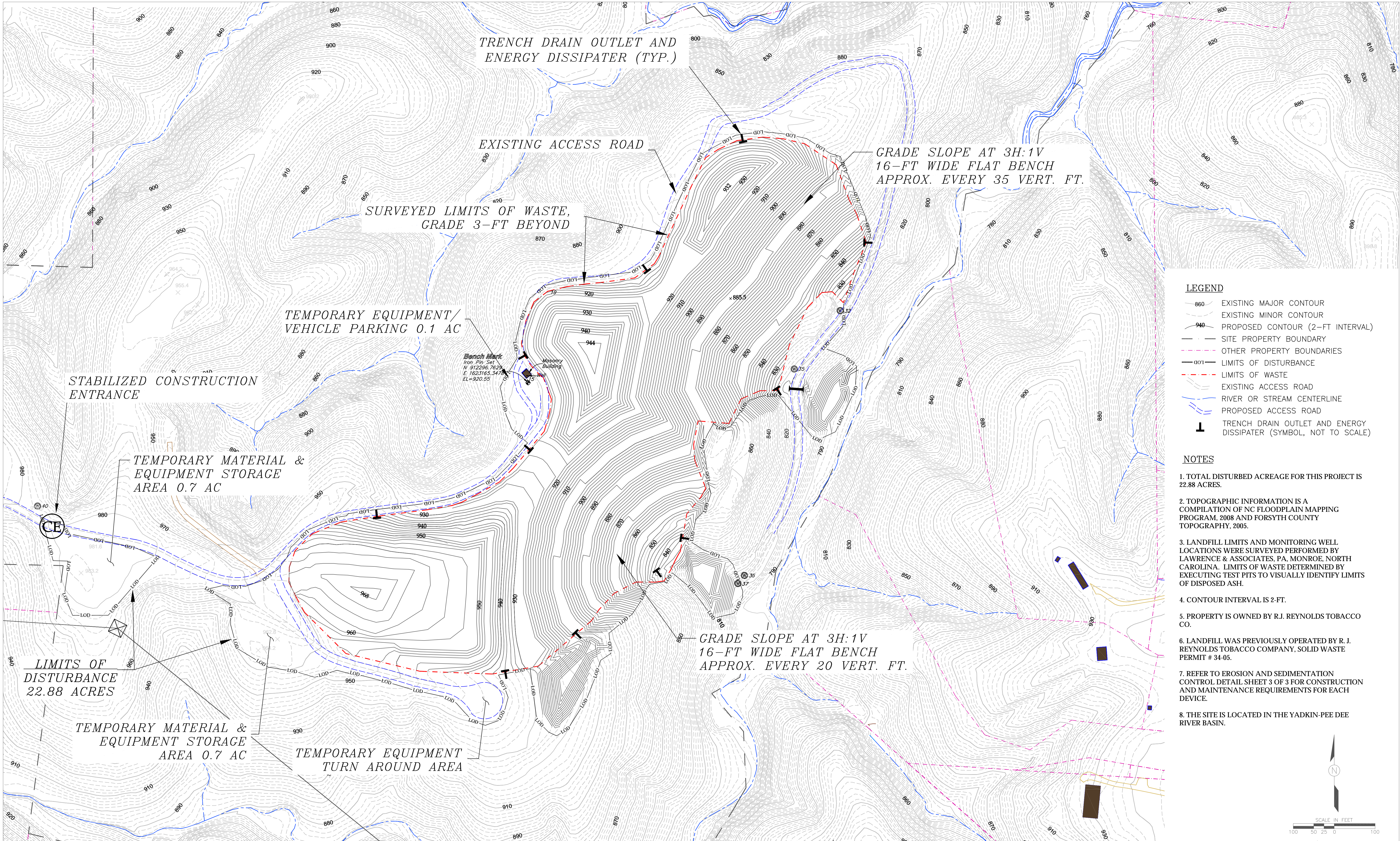
- 860 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- SITE PROPERTY BOUNDARY
- OTHER PROPERTY BOUNDARIES
- 001 LIMITS OF DISTURBANCE
- - - LIMITS OF WASTE
- EXISTING ACCESS ROAD
- RIVER OR STREAM CENTERLINE

NOTES

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- CONTOUR INTERVAL IS 2-FT.
- PROPERTY IS OWNED BY R.J. REYNOLDS TOBACCO CO.
- LANDFILL WAS PREVIOUSLY OPERATED BY R. J. REYNOLDS TOBACCO COMPANY, SOLID WASTE PERMIT # 34-05.
- REFER TO EROSION AND SEDIMENTATION CONTROL DETAIL SHEET 3 OF 3 FOR CONSTRUCTION AND MAINTENANCE REQUIREMENTS FOR EACH DEVICE.
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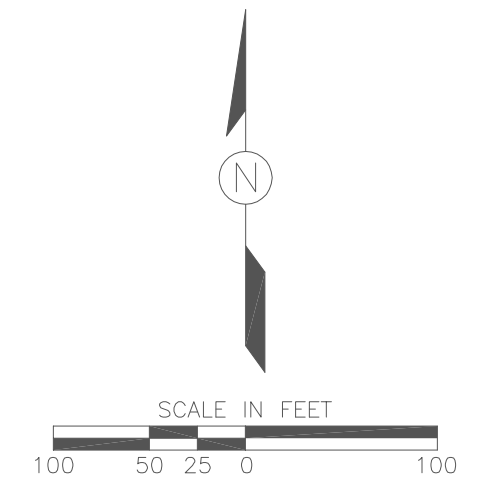


NO.				NO.				REVISION				RURAL HALL ASH LANDFILL RURAL HALL, NORTH CAROLINA				R.J. REYNOLDS TOBACCO COMPANY WINSTON-SALEM, NORTH CAROLINA				ERM NC, INC. 8600 CORPORATE CENTER DRIVE, SUITE 200 CHARLOTTE, NORTH CAROLINA 28226 (704) 541-8345				CHECKED PROJECT DESIGNER D. WASIELA PROJECT ENGINEER D. WASIELA PROJECT MANAGER D. WASIELA APPROVED				DATE 6/3/11				DRAWN CJM SCALE AS NOTED				DATE 6/3/11 W.O. NO. 0103137				CLIENT APPROVAL ISSUED FOR DATE				DRAWING NO. 1 REV. NO. 0 SHEET 1 OF 5			
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- LEGEND**
- 860 EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - 940 PROPOSED CONTOUR (2-FT INTERVAL)
 - SITE PROPERTY BOUNDARY
 - OTHER PROPERTY BOUNDARIES
 - LIMITS OF DISTURBANCE
 - LIMITS OF WASTE
 - EXISTING ACCESS ROAD
 - RIVER OR STREAM CENTERLINE
 - PROPOSED ACCESS ROAD
 - TRENCH DRAIN OUTLET AND ENERGY DISSIPATER (SYMBOL, NOT TO SCALE)

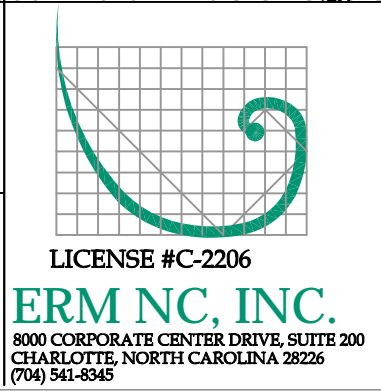
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NO.	DATE	APPR.	NO.	DATE	APPR.	REVISION

RURAL HALL ASH LANDFILL
RURAL HALL, NORTH CAROLINA

R.J. REYNOLDS TOBACCO COMPANY
WINSTON-SALEM, NORTH CAROLINA



CHECKED	DATE
PROJECT DESIGNER D. WASIELA	6/3/11
PROJECT ENGINEER D. WASIELA	
PROJECT MANAGER D. WASIELA	
APPROVED	
APPROVED	

DRAWN		DATE	CLIENT APPROVAL	
CJM	6/3/11			
AS NOTED		W.O. NO. 0103137	ISSUED FOR	DATE

DRAWING NO.	
2	
REV. NO.	0
SHEET	2 OF 5

PROJECT NARRATIVE

The project will involve removal of existing final cover soils and topsoil, re-grading of ash to promote storm water run-off, installation of a 40-mil linear low density polyethylene (LLDPE) liner, installation of a drainage geocomposite, replacement of previously removed cover soils and topsoil and final seeding.

TRENCH DRAIN OUTLET AND
ENERGY DISSIPATER (TYP.)

EXISTING ACCESS ROAD

SURVEYED LIMITS OF WASTE,
GRADE 3-FT BEYOND

GRADE SLOPE AT 3H:1V
16-FT WIDE FLAT BENCH
APPROX. EVERY 35 VERT. FT.

PERMANENT DITCH D-5
25-YR STORM, TRAPEZOIDAL,
10-FT WIDE 2H:1V SIDE SLOPES

EXISTING ROADSIDE DITCH
IMPROVEMENT TO MEET DITCH
D-5 SPECIFICATIONS

EXISTING 18" CMP CULVERT

SEDIMENT TRAP BAFFLE (TYP.)

EXISTING SEDIMENT TRAP
ST-1; DRAINAGE AREA=3.99 AC

PERMANENT DITCH D-4
25-YR STORM, TRAPEZOIDAL,
10-FT WIDE 2H:1V SIDE SLOPES

PERMANENT DITCH D-3
25-YR STORM, TRAPEZOIDAL,
10-FT WIDE 2H:1V SIDE SLOPES

EXISTING SEDIMENT BASIN
CONVERT TO SEDIMENT
TRAP ST-2; DRAINAGE
AREA=4.33 AC

GRADE SLOPE AT 3H:1V
16-FT WIDE FLAT BENCH
APPROX. EVERY 20 VERT. FT.

PERMANENT DITCH D-2
25-YR STORM, TRAPEZOIDAL,
10-FT WIDE 2H:1V SIDE SLOPES

PROPOSED SEDIMENT
TRAP ST-3, DRAINAGE AREA
OF 4.97 ACRES

PERMANENT DITCH D-1
25-YR STORM, TRAPEZOIDAL,
10-FT WIDE 2H:1V SIDE SLOPES

TEMPORARY EQUIPMENT/
VEHICLE PARKING 0.1 AC

SILT FENCE (TYP.)

STONE OUTLET EVERY
1/4-ACRE (TYP.)

TEMPORARY MATERIAL &
EQUIPMENT STORAGE
AREA 0.7 AC

SILT FENCE (TYP.)

LIMITS OF
DISTURBANCE
22.88 ACRES

TEMPORARY MATERIAL &
EQUIPMENT STORAGE
AREA 0.7 AC

EXISTING
ROADSIDE
DITCH

TEMPORARY EQUIPMENT
TURN AROUND AREA

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED CONTOUR (2-FT INTERVAL)
- SITE PROPERTY BOUNDARY
- OTHER PROPERTY BOUNDARIES
- LIMITS OF DISTURBANCE
- LIMITS OF WASTE
- EXISTING ACCESS ROAD
- RIVER OR STREAM CENTERLINE
- PROPOSED ACCESS ROAD
- DRAINAGE AREA
- SILT FENCE
- STONE OUTLET
- SEDIMENT TRAP BAFFLE
- SEDIMENT TRAP STONE WEIR
- TRENCH DRAIN OUTLET AND ENERGY DISSIPATER (SYMBOL, NOT TO SCALE)

NOTES

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SCALE IN FEET
100 50 25 0 100

NO.	DATE	APPR.	NO.	DATE	APPR.	REVISION

RURAL HALL ASH LANDFILL
RURAL HALL, NORTH CAROLINA

R.J. REYNOLDS TOBACCO COMPANY
WINSTON-SALEM, NORTH CAROLINA



CHECKED	DATE
PROJECT DESIGNER D. WASIELA	6/3/11
PROJECT ENGINEER D. WASIELA	
PROJECT MANAGER D. WASIELA	
APPROVED	
APPROVED	

EROSION AND SEDIMENT CONTROL PLAN

DRAWN
CJM
SCALE
AS NOTED

DATE
6/3/11
W.O. NO.
0103137

CLIENT APPROVAL
ISSUED FOR
DATE

DRAWING NO.	REV. NO.
3	0
SHEET 3 OF 5	

CONSTRUCTION SEQUENCE

1. A pre-construction meeting should take place prior to start of construction activities.
2. Construction will occur in three phases of approximately equal area (i.e. in thirds). Each construction phase will consist of installation of E&S measures, preparation of stockpile areas, stripping and staging of topsoil, cap construction, and restoration (including establishment of vegetation).
3. Begin clearing and grubbing site. Clear and grub only those areas necessary for installation of the erosion control measures.
4. Install silt fence, sediment basins, diversion ditches, etc. Install a clean-out stake in each sediment basin as shown in sediment basin details. Basins to be cleaned out when it fills to the halfway mark. Once erosion control measures have been installed and prior to mass grading activities, the site is to be inspected by NCDENR - Land Quality.
5. Grade site according to contract documents. Maintain erosion control devices as needed.
7. Install storm drainage as indicated on plans.
8. Grass or otherwise stabilize all areas as they are brought to final grades.
9. The contractor shall diligently and continuously maintain all erosion control devices and structures to minimize erosion. Inspect and repair measures after each rainfall and as needed throughout the project.
10. Contractor to leave all erosion control devices in place at the conclusion of his contract. Contractor is to clean-out, repair and grass stabilize all denuded areas.
11. It is the contractor's responsibility to contain sediment onsite. Additional erosion control measures may be required by the Engineer.
12. All erosion control measures to be in accordance with the North Carolina Erosion and Sediment Control Planning and Design Requirements and Land Development Standards.
13. All graded slopes must be seeded and mulched within 15 days of completion of grading. All remaining areas are to be seeded and mulched within 120 days. The angle for graded slopes and fills shall be no greater than the angle which can be retained by vegetative cover or other adequate erosion control devices or structures.
14. Additional measures to control erosion and sediment may be required by a representative of the NCDENR - Land Quality Section.
15. Any land-disturbing activity > 5 acres requires compliance with all conditions of the General Permit to Discharge Storm Water Under the National Pollutant Discharge Elimination System (Permit No. NCG120000). Any permit noncompliance is a violation of the Clean Water Act and may require enforcement action by the North Carolina Department of Environment and Natural Resources.

SEEDBED PREPARATION NOTES

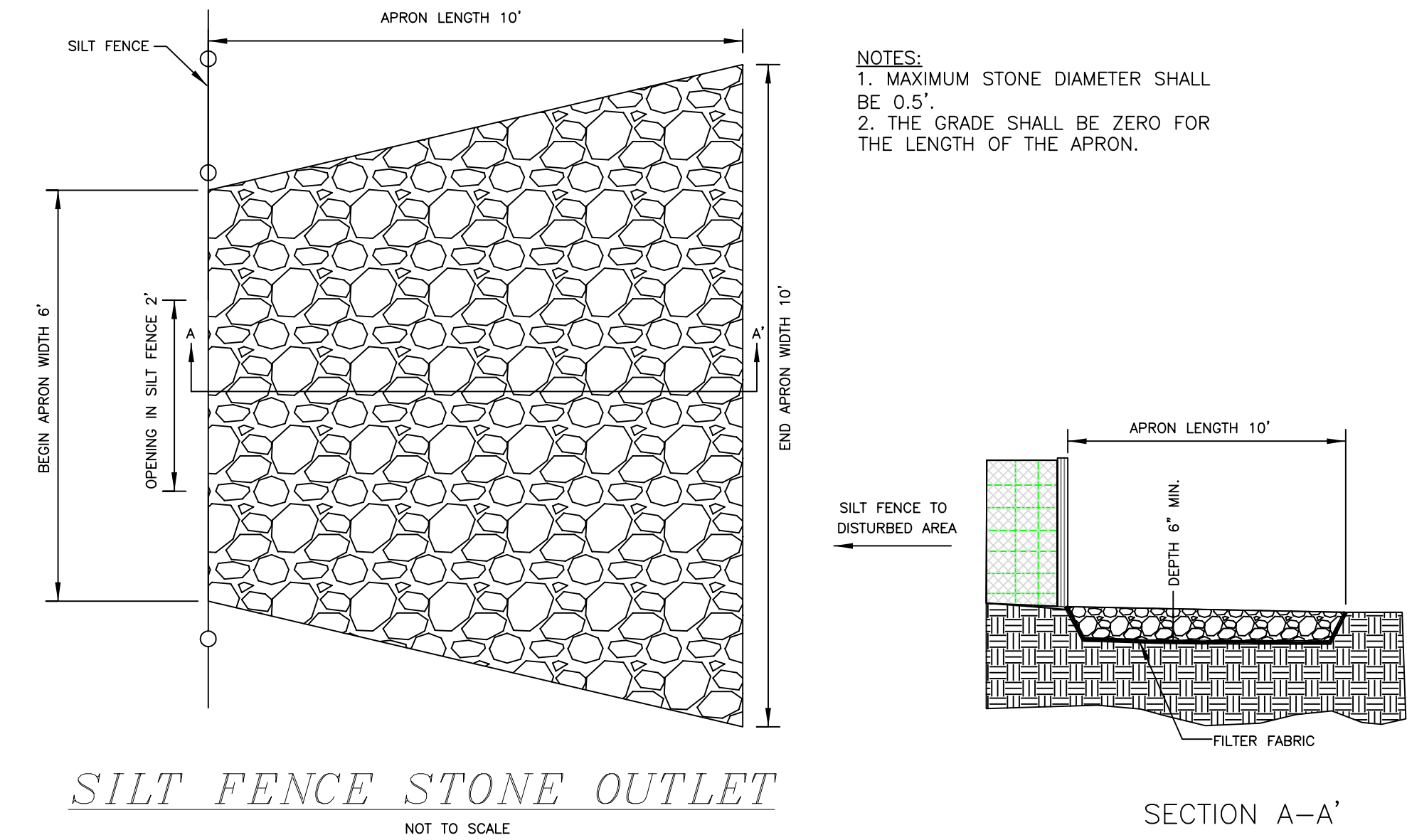
1. Surface water control measures to be installed according to plan.
2. Areas to be seeded shall be ripped and spread with available topsoil 3" deep.
3. Loose rocks, roots and other obstructions shall be removed from the surface so that they will not interfere with establishment and maintenance of vegetation. Surface for final seedbed preparation, at finish grades shown, shall be reasonably smooth and uniform.
4. If no soil test is taken, fertilizer and lime to be according to seeding specifications above. In addition, provide 15 lbs./1000 s.f. of super phosphate.
5. If soil test is taken, provide fertilizer and lime according to soil test report.
6. Fertilizer and lime shall be applied uniformly and mixed with the soil during seedbed preparation.
7. Additional erosion control measures may be required depending on field conditions.
8. Mulch to be tacked or mechanically tied down within two days after mulch is spread.
9. Buffer zones to be used only as specifically denoted on plans.
10. Borrow and fill to be balanced on site.
11. Re-fertilize in the second year unless growth is fully adequate. May be mowed once or twice a year, but mowing is not necessary. Re-seed, fertilize, and mulch damaged areas immediately.

SEEDING SPECIFICATIONS:

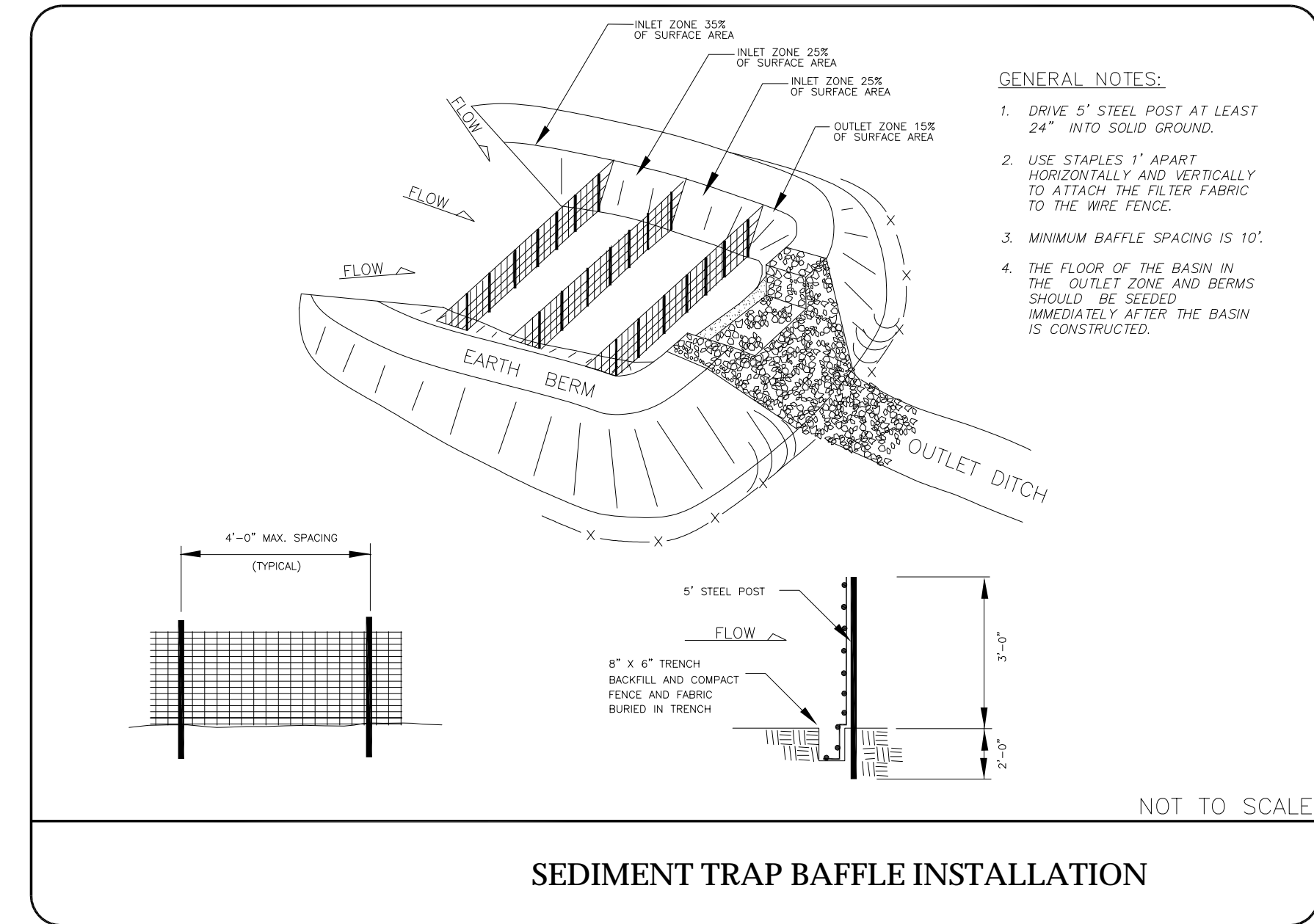
Date	Type	Planting Rate
Aug. 15 - Nov. 1	Tall Fescue	300 lb./ac. or 7 lb./1000 s.f.
Nov. 1 - Mar. 1	Tall fescue and Abruzzi Rye	300 lb./ac. or 7 lb./1000 s.f.
Mar. 1 - Apr. 15	Tall Fescue	300 lb./ac. or 7 lb./1000 s.f.
Apr. 15 - Jul. 30	Mulled Common	30 lb./ac. or 1 lb./1000 s.f.
Jul. 15 - Aug. 15	Bermudagrass	300 lb./ac. or 7 lb./1000 s.f.
	Tall Fescue and Browntop Millet or Sorghum Sudan Hybrids	35 lb./ac. or 7/8 lb./1000 s.f. 30 lb./ac. or 3/4 lb./1000 s.f.

Mulch with straw applied at the rate of 75-100 lb./1000 s.f.
Heavily mulched during January - March period.

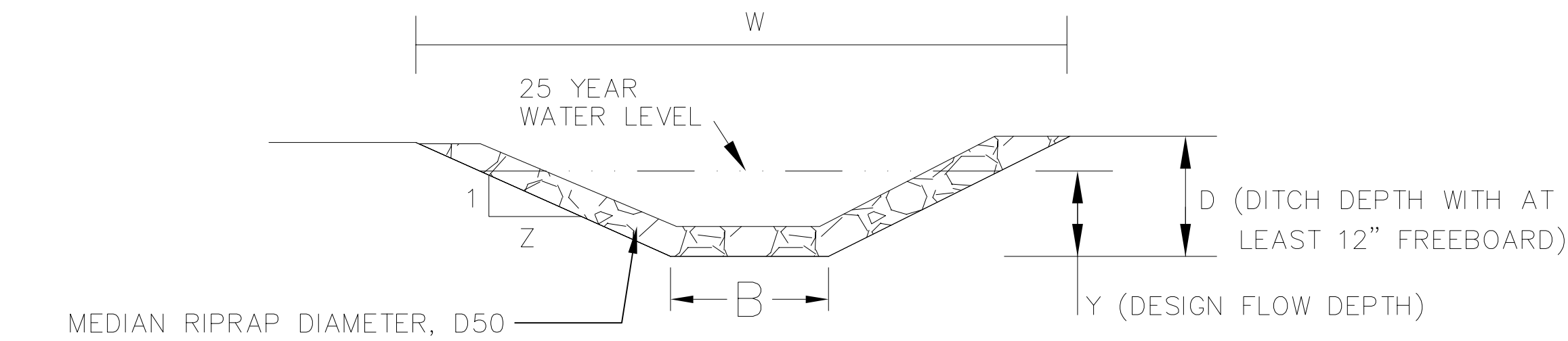
Apply agricultural lime at the rate of 90 lb./1000 s.f.
Apply 10-10-10 commercial fertilizer at the rate of 20 lb./1000 s.f.
Tack: Asphalt tie down - 225 gal./ac.



SILT FENCE STONE OUTLET

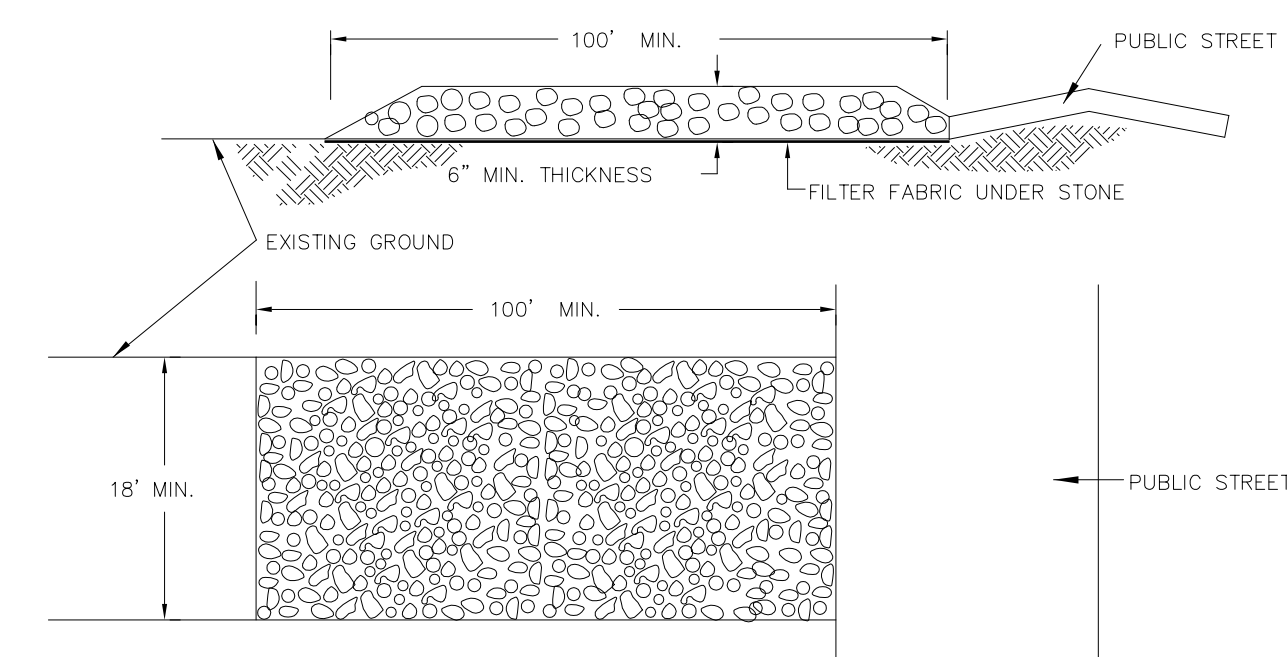


SEDIMENT TRAP BAFFLE INSTALLATION



DITCH NO.	C	I	A(AC.)	Q ₂₅ (CFS)	S(MIN.) (ft./ft.)	D ₅₀	Z	D	B	W	Y	V(FPS)	Q ₂₅ PROV. FULL FLOW (CFS)	COMMENTS
D-1	0.23	5.11	3.24	3.8	0.138	12"	2	1.5	4	10	0.35	2.36	3.9	D50 PROVIDED > D50 REQUIRED
D-2	0.23	6.05	2.16	3.0	0.257	12"	2	1.5	4	10	0.24	2.95	3.2	D50 PROVIDED > D50 REQUIRED
D-3	0.25	7.58	2.31	4.4	0.164	12"	2	1.5	4	10	0.34	2.89	4.6	D50 PROVIDED > D50 REQUIRED
D-4	0.25	6.05	0.98	1.5	0.32	12"	2	1.5	4	10	0.16	2.57	1.8	D50 PROVIDED > D50 REQUIRED
D-5	0.25	5.11	3.18	4.1	0.132	12"	2	1.5	4	10	0.47	1.80	4.2	D50 PROVIDED > D50 REQUIRED

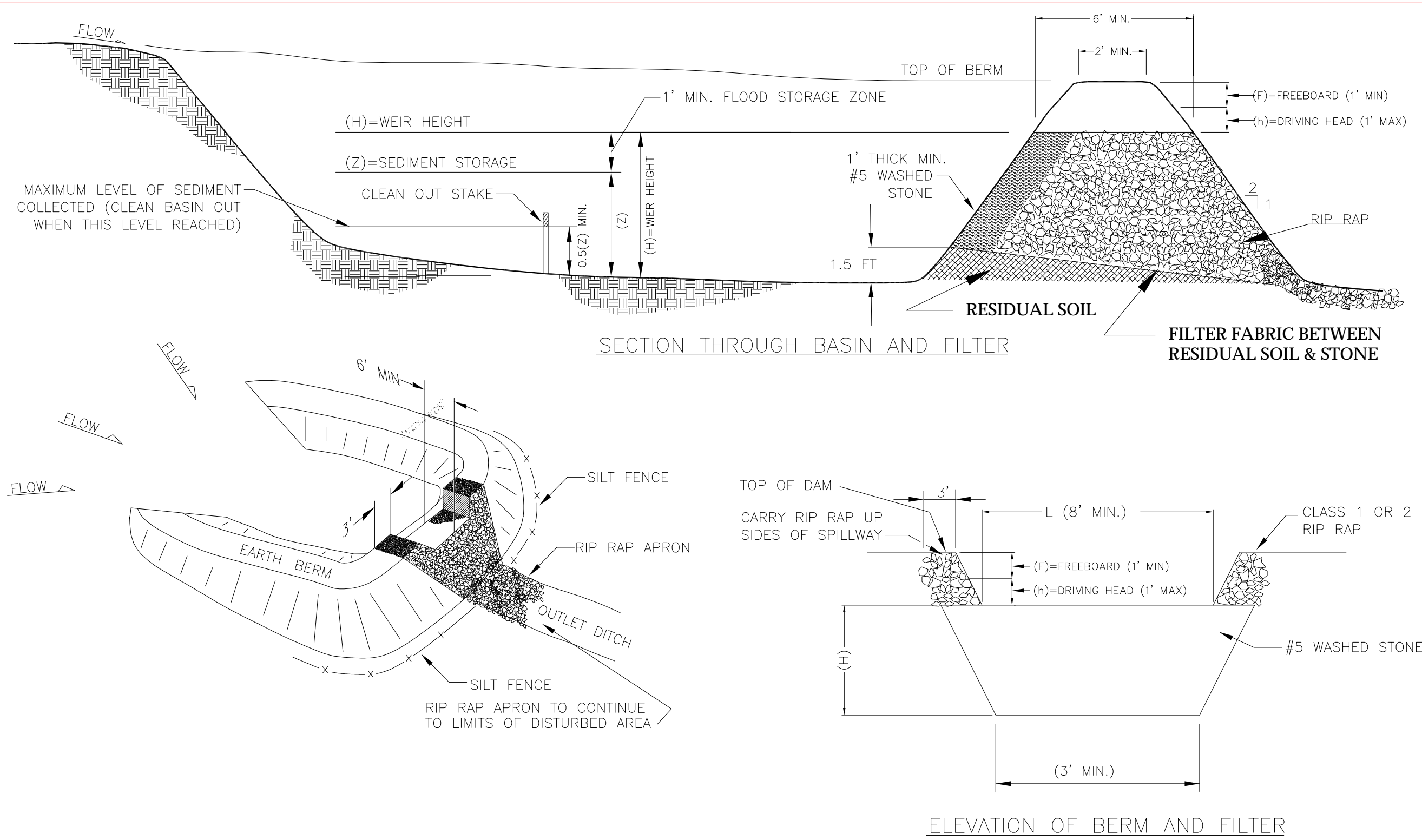
DITCH CROSS-SECTION



- GENERAL NOTES:
- A stabilized pad of washed stone shall be located where traffic will be entering or leaving a construction site to or from a public street.
 - STONE TO BE SURGE STONE OR 2"-3" RAILROAD BALLAST
 - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT
 - ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY.
 - WHEN NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.
 - FILTER FABRIC SHALL BE MIRAFI 500 OR EQUIVALENT.

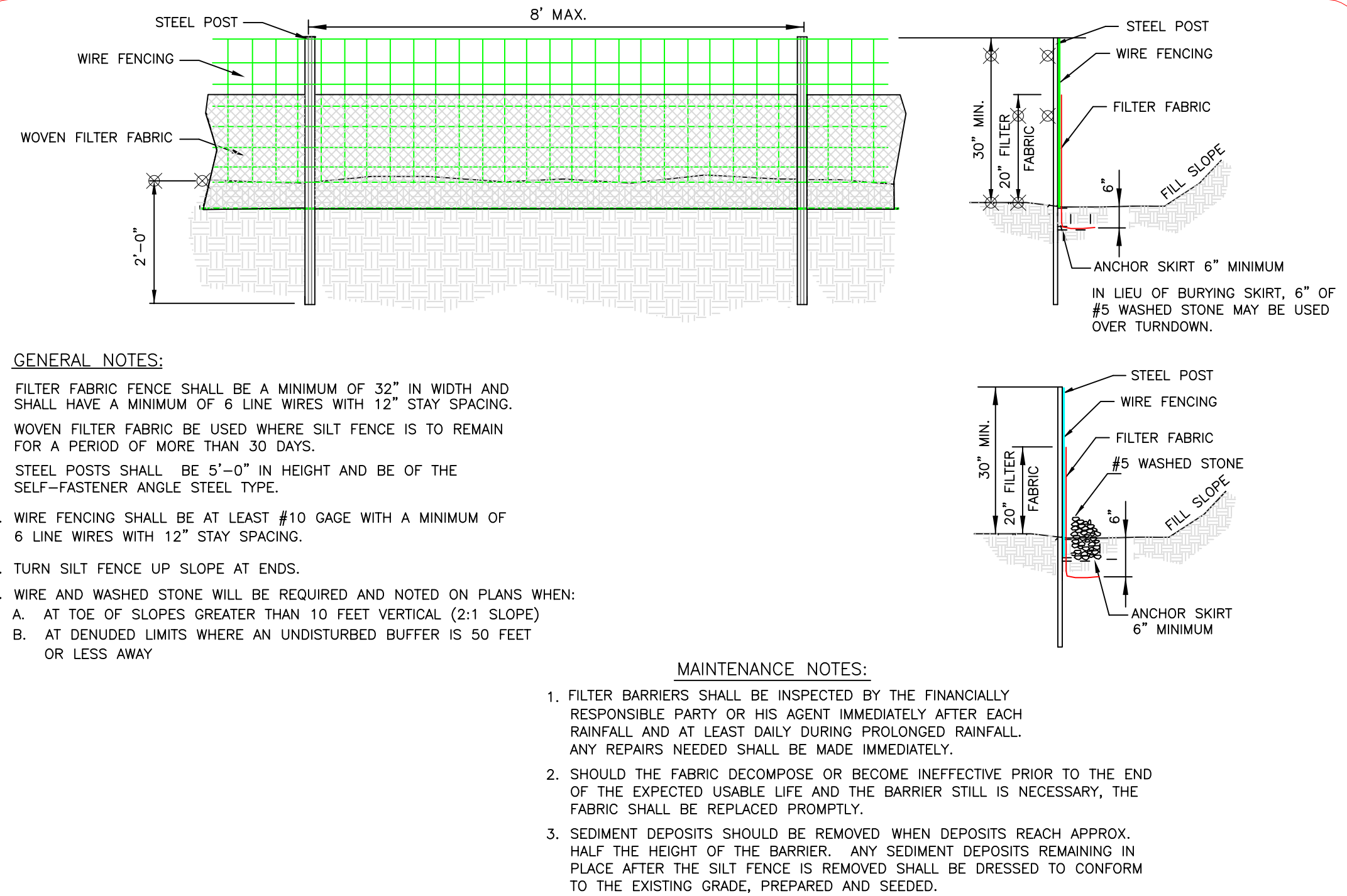
STABILIZED CONSTRUCTION ENTRANCE

(N.C. STD. NO. 6.06)



SEDIMENT TRAP NO.	DENUDED AREA (AC)	STORAGE VOLUME REQ.(CF)	BASIN DIMENSIONS						BASIN SIDE SLOPES	STORAGE VOLUME PROVIDED (CF)	DRAINAGE AREA RUNOFF (10-YR)				WEIR LENGTH L 10.00' MIN.	TOP OF DAM ELEVATION	WEIR ELEVATION
			TOP	BOTT	Z	H	h	F			C	I	A	Q			
ST-1	3.99	14,364	5,685	2,895	3.5'	4.5'	0.5	1'	2:1	21,450	0.4	6.85	3.99	10.9	12'	790.0	788.5
ST-2	4.33	15,588	4,778	2,519	3.5'	4.5'	0.5'	1'	2:1	16,418	0.4	6.85	4.33	11.9	12'	820.0	818.5
ST-3	4.97	17,892	5,719	2,112	4.5'	5.5'	0.5	1'	2:1	21,535	0.4	6.85	4.97	13.6	12'	908.0	906.5

SEDIMENT TRAP



MAINTENANCE NOTES:

1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROX. HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

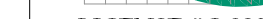
SILT FENCE

NO.	DATE	APPR.	NO.	DATE	APPR.	REVISION	EROSION & SEDIMENTATION CONTROL DETAIL SHEET	DRAWING NO.
								4
								0
								4
								5



DITCH NO.	C	I	A(C.)	Q ₂₅ (CFS)	S(MIN.) (ft./ft.)	D ₅₀	Z	D	B	W	Y	V(FPS)	Q ₂₅ PROV. FULL FLOW (CFS)	COMMENTS
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DITCH CROSS-SECTION

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION	RURAL HALL ASH LANDFILL		 ERM NC, INC. <small>8000 CORPORATE CENTER DRIVE, SUITE 200 CHARLOTTE, NORTH CAROLINA 28226 (704) 581-8340</small>	LANDFILL FINAL CAP CONSTRUCTION DETAILS		DRAWING NO.
1	7-14-11	DWW	East Slope Benching Detail; vegetative cover thickness from 16-in. to 6-in.					R.J. REYNOLDS TOBACCO COMPANY RURAL HALL, NORTH CAROLINA					5
								DRAWN BY D. WASIELA PROJECT ENGINEER					REV. NO.
								DESIGN ENGINEER D. WASIELA PROJECT MANAGER					0
												SCALE NTS DATE 6/7/2010	
												PROJECT NO. 0103137 AutoCAD NO. LANDFILL CAP DETAILS.DWG	SHEET 5 OF 5